

X. GENERAL COMMENTS APPLICABLE TO ITEM DESIGNATIONS

a. One commenter suggested that EPA designate items in a material neutral manner. In other words, rather than designating items made of specific materials (e.g., "plastic" trash bags), EPA should simply designate the items in generic terms (e.g., trash bags).

EPA believes that such an approach is not appropriate for all items. Under RCRA section 6002(c)(1), each procuring agency which procures "any items" designated by EPA is required to procure such items composed of the highest percentage of recovered materials practicable. As a result, if EPA designates a generic category of items, procuring agencies are obligated to try to purchase all items within that category containing recovered materials. For example, when EPA designated "paper and paper products" or "building insulation products," procuring agencies were obligated to purchase all types of paper products or building insulation containing recovered materials, even though EPA did not provide content recommendations for all products within these categories. In other instances, where EPA is not aware that items manufactured from other types of materials are made with or could contain recovered materials, EPA has limited its designations so as not to create an unnecessary burden on agencies to try to purchase an item that is not available. When EPA learns that the generic item is being made with additional recovered materials, EPA will evaluate the new information and consider amending the item designation accordingly.

In implementing this process for the items listed in the proposed CPG, EPA sometimes had information on the availability of a particular item made with a specific recovered material (e.g., plastic), but no information on the availability of the item made from a different recovered material or any indication that it is possible to make the item with a different recovered material. In these instances, EPA concluded that it was appropriate to include the specific material in the item designation in order to provide vital information to procuring agencies as they seek to fulfill their obligations to purchase designated items composed of the highest percentage of recovered materials practicable. This information enables the agencies to focus their efforts on products that are currently available for purchase, reducing their administrative burden. EPA also included information in the proposed CPG, as well as in the draft RMAN that accompanied the proposed CPG, that advised procuring agencies that EPA is not recommending the purchase of an item made from one particular material over a similar item made from another material. For example, EPA included the following statement in the preamble discussion for plastic desktop accessories (59 FR 18879): "This designation does not preclude a procuring agency from purchasing desktop accessories manufactured from another material, such as wood. It simply requires that a procuring agency, when purchasing plastic desktop accessories, purchase these accessories made with recovered materials ..."

b. No commenters opposed the designations of the following items: structural fiberboard, laminated paperboard, patio blocks, traffic barricades, traffic cones, playground surfaces, running tracks, hydraulic mulch, plastic desktop accessories, and plastic trash bags. Therefore, today, EPA is promulgating these item designations as proposed. The following subsections discuss the

significant comments pertaining to the remaining proposed item designations.

c. Several commenters requested that EPA designate additional items in the final CPG. Suggested items included carpet underlay, lead acid batteries, rebuilt and remanufactured automotive parts, roofing materials, and grocery bags.

Because the designation of items under RCRA section 6002 imposes legally enforceable duties on procuring agencies, EPA's designation of items must occur through formal notice-and-comment rulemaking procedures. EPA cannot designate items without having provided the opportunity for public comment. EPA will consider the feasibility of designating the suggested items in a future proposed revision to the CPG.

XI. VEHICULAR PRODUCTS

A. Re-refined Lubricating Oil and Retread Tires

In the proposed CPG, the Agency stated it would include the previous designations for re-refined lubricating oil and retread tires in a new 40 CFR 247.11(a) and (b), respectively, as part of consolidating the guidelines (see 59 FR 18867, April 20, 1994). The new 40 CFR 247.11 includes the existing designations of these two items and a new designation for engine coolants which is discussed in the following subsection.

B. Engine Coolants

1. Background

In the proposed CPG, the Agency proposed to designate reclaimed engine coolants (see 59 FR 18867, April 20, 1994), also known as antifreeze. Automotive engine coolants are marketed in this country in two formulations: ethylene glycol-based or propylene glycol-based coolants. Propylene glycol-based engine coolants have just recently been marketed nationwide for consumer purchase. There are additional formulations used in other countries.

2. Summary of Comments and Agency's Response

a. Applicability of designation to non-vehicular engines. Two commenters asked that EPA clarify that the proposed designation applies only to engine coolants used in vehicles and not to other glycol-based coolants used in other types of machinery such as generator motors.

EPA believed that inclusion of engine coolants in the Vehicular Products Category clarifies that the designation is limited to vehicular engine coolants and does not apply to other non-vehicular coolants. However, to remove any ambiguity, EPA is revising the engine coolant designation to specify that it applies to vehicles only.

b. Scope of designation. Two commenters urged EPA to limit the designation to ethylene-glycol based engine coolants and exclude other types of engine coolants. These two commenters stated that propylene glycol is not currently being reclaimed and that, therefore, propylene glycol-based engine coolants do not meet the statutory requirements for designation. Furthermore, one commenter noted that U.S. automobile manufacturers "currently disallow the use of propylene glycol engine coolants in their products. Products which are not ethylene glycol-based fail to meet the appropriate chemical properties requirement and are therefore not qualified for use in American Automobile Manufacturers Association members' vehicles."

EPA believes that propylene glycol-based engine coolants are not currently being recovered and processed into reclaimed engine coolants. However, EPA is unaware of any technical reason that would prevent this from occurring. RCRA directs EPA to "designate those items which are or can be produced with recovered materials and whose procurement by procuring agencies will carry out the objectives of this section [Section 6002 of RCRA]." Rather than precluding procuring agencies from purchasing propylene glycol-based engine coolants and reclaiming them, EPA concludes that it is inappropriate to limit the item designation to ethylene glycol-based engine coolants only. If propylene glycol-based engine coolants do not meet a procuring agency's performance requirements, the agency need not purchase them. Thus, EPA has decided to finalize the engine coolants designation as proposed.

c. Hazardous waste determination. Many comments stated that EPA should not determine that spent engine coolants are hazardous wastes. Commenters also stated that their spent engine coolants do not exhibit the toxicity characteristic of a hazardous waste.

The preamble to the proposed CPG included a statement that spent engine coolants in some instances exhibit the toxicity characteristic of a hazardous waste. This was simply a statement of fact and was not meant to imply that EPA believed that all spent engine coolants exhibited the toxicity characteristic of a hazardous waste or that EPA was considering listing spent engine coolants as a hazardous waste. EPA included these statements only for the purpose of advising procuring agents that engine coolants can sometimes exhibit a characteristic of a hazardous waste and, if disposed, must be disposed in accordance with applicable state and Federal hazardous waste regulations.

d. Scope of ASTM test methods. Commenters pointed out that EPA stated incorrectly in the preamble to the proposed CPG (see 59 FR 18867, April 20, 1994) that American Society for Testing and Materials (ASTM) tests D 3306 and D 4985 are applicable to reclaimed engine coolant. Commenters explained that these tests actually apply to new or virgin engine coolant.

The commenters are correct. The ASTM Committee on Engine Coolants is in the process of investigating the effects of various contaminants on engine coolants and intends to establish specifications for reclaimed and reformulated coolants in the future.

3. Rationale for Designation

EPA believes that engine coolant satisfies the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, significant quantities of spent engine coolants require disposal annually. Reclamation could substantially reduce these quantities.

b. Technically proven uses. Reclamation of engine coolants is being done through on-site and off-site reclamation. Some Navy and Postal Service facilities are reclaiming engine coolants and have not encountered performance problems with the reclaimed product. Additionally, EPA received no comments indicating performance problems with reclaimed engine coolants. The ASTM D15 Committee on Engine Coolants has published standards for engine coolants and is working on a standard for reclaimed and reformulated engine coolants.

c. Impact of government procurement. Government agencies operate a large number of vehicles. The Federal government alone, including the U.S. Postal Service, operates a fleet of more than 500,000 vehicles of all types: passenger vehicles, light and heavy trucks, buses, ambulances, off-road vehicles, etc.

Military installations, the Postal Service, and some Federal civilian agencies have motor pools or vehicle maintenance facilities at which vehicles are serviced. If all of these agencies were to establish an engine coolant reclamation program, the potential recovery of used engine coolant would be significant. While not all agencies have motor pools or vehicle maintenance centers where engine coolant recycling could be established, EPA believes that it is important to begin to establish engine coolant reclamation programs throughout the Federal fleet in order to recover this material. EPA further believes that state and local government fleets and private sector fleets may follow the Federal lead, thus substantially increasing engine coolant reclamation and greatly reducing the amount of engine coolants requiring disposal each year. Additionally, in those instances where reclamation is not possible, if agencies were to purchase reclaimed engine coolants directly, this could significantly contribute to increasing overall engine coolant reclamation.

4. Designation

In 40 CFR 247.11(c), EPA is designating reclaimed engine coolant as an item that is or can be made with recovered materials.

XII. CONSTRUCTION PRODUCTS

In the CPG, the Agency proposed that new 40 CFR 247.12 contain designations of the following construction products: building insulation, structural fiberboard and laminated paperboard, plastic pipe and fittings, geotextiles, cement and concrete, carpet, and floor tiles and

patio blocks. The following subsections discuss each of these items, the Agency's response to public comments, and the final designations of these items, where appropriate. EPA previously designated building insulation products and cement and concrete containing fly ash in 1989 and 1983 procurement guidelines, respectively, but proposed to consolidate these designations in the CPG (see 59 FR 18868, April 20, 1994). These designations are now included in 40 CFR 247.12(a) and (c), respectively.

A. Building Insulation Products

1. Background

Fiberglass insulation was designated in the 1989 procurement guideline for building insulation products. The Agency did not recommend recovered materials content levels for fiberglass because this item was not being made routinely with recovered material at that time (see 54 FR 7348, February 17, 1989) and it was not clear what contents levels were feasible. In the CPG, fiberglass is included in the building insulation products designation (see 59 FR 18890, April 20, 1994). In the draft RMAN, EPA recommended a recovered materials content range for fiberglass insulation of 20 to 25 percent. EPA requested comment on also recommending a post-consumer cullet content of five percent. Comments on the recommendation are addressed in a separate document entitled, "RMAN for Items Designated in the Comprehensive Procurement Guideline -- Supporting Analyses."

2. Summary of Comments and Agency Response

EPA received two comments opposing the designation of fiberglass. As EPA stated in the proposed CPG (see 59 FR 18868, April 20, 1994), fiberglass insulation was designated in the 1989 procurement guideline for building insulation products and the Agency was not seeking comment on the appropriateness of the prior designation. Rather, EPA requested comment only on the recommended recovered materials content levels for fiberglass insulation contained in the draft RMAN.

a. Competing uses of glass cullet. One commenter stated that encouraging the use of cullet to make fiberglass will interfere with glass bottlers' efforts to use glass cullet to make bottles.

EPA does not agree that the use of recovered cullet by fiberglass insulation manufacturers will interfere with glass bottle manufacturers ability to obtain cullet. In fact, the opposite may be true. It is easier for glass bottlers to obtain and use recovered cullet than for fiberglass insulation manufacturers to do so. Glass bottlers, as a whole, are able to use all three colors of bottle cullet, while fiberglass insulation manufacturers are more restricted regarding the percentage of each color that can be used. In the absence of empirical data to the contrary, EPA does not believe that there will be a supply problem for glass bottlers.

b. Impact on waste minimization programs. A second commenter stated that the

introduction of postconsumer glass cullet into his fiberglass insulation manufacturing process would increase the quantity of hazardous waste generated at his facility, adversely affecting his waste minimization program. This commenter stated that postconsumer cullet introduces metals (including lead, selenium, and chromium) into the manufacturing process which would, in turn, cause furnace dust and emissions to be hazardous.

EPA notes that it is not mandating the use of recovered materials in the manufacture of fiberglass insulation. It is solely the decision of the manufacturer to market his product to procuring agencies seeking fiberglass insulation containing recovered materials. Additionally, the recommended content levels included in the RMAN do not specify postconsumer recovered cullet. Provided the commenter has access to sufficient preconsumer recovered glass cullet to meet the content standards established by a procuring agency, it may be possible for the commenter to sell his product to the procuring agency and not increase his generation of hazardous waste.

The Agency applauds all efforts to minimize hazardous waste generation. EPA's research shows that fiberglass insulation manufacturing plants typically generate hazardous waste whether or not they use recovered materials in their raw material mix. EPA encourages the fiberglass insulation industry to work with the glass packaging industry to seek ways to reduce the toxic constituents added to glass packaging to eliminate or reduce the likelihood that additional hazardous waste will be generated due to cullet usage in making fiberglass products.

B. Structural Fiberboard and Laminated Paperboard

1. Background

In the proposed CPG, EPA proposed designating structural fiberboard and laminated paperboard (59 FR 18868) for both insulating and structural purposes, including building board, insulating formboard, sheathing, shingle backer, sound-deadening board, roof insulating board, acoustical and non-acoustical ceiling tile, insulating wallboard, acoustical and non-acoustical lay-in panels, floor underlayments, and roof overlay (coverboard). Structural fiberboard was defined as having a density between 10 lbs/ft³ and 31 lbs/ft³, as defined by ASTM specification C 208. Laminated paperboard products were defined as having a density in the range of 42 lbs/ft³.

2. Summary of Comments and Agency's Response

a. Structural fiberboard data. While no commenters opposed the designation of structural fiberboard, two commenters stated that the information and data the Agency used in developing the proposed CPG and draft RMAN were inaccurate. The commenters maintained that EPA's information on recovered materials usage, particularly its postconsumer recovered paper data, were not representative of current industry capabilities.

Based on these comments, the Agency conducted additional research to obtain more current industry data. EPA determined that, although the data used to develop the proposed CPG and draft RMAN accurately reflected industry use of recovered materials for the year in which they were gathered, 1991, they did not reflect current industry usage of recovered materials, especially postconsumer recovered paper. On the basis of this additional research, EPA has revised the recovered materials content recommendations for structural fiberboard contained in the RMAN that accompanies this CPG.

b. Laminated paperboard. EPA did not receive any comments on its proposed designation of laminated paperboard. Therefore, the Agency is designating laminated paperboard as proposed.

c. Other board products. In its proposal, EPA also requested additional information about the use of recovered materials to produce other board products, including particleboard, hardboard, and medium density fiberboard. The Agency received two comments on these products and will use this information in evaluating these products for potential designation in future updates to the CPG.

3. Rationale for Designation

EPA believes that structural fiberboard and laminated paperboard products satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, both paper and wood are significant components of the solid waste stream.

b. Technically proven uses. Both structural fiberboard and laminated paperboard can be produced with high levels of recovered materials without compromising product performance. All seven manufacturers of structural fiberboard and all of the laminated paperboard manufacturers use recovered materials in the manufacture of their products.

In addition, both structural fiberboard and laminated paperboard containing recovered materials are established products with established specifications. ASTM specification C 208 applies to structural fiberboard products containing recovered materials. Both structural fiberboard and laminated paperboard meet other applicable performance requirements, such as

those established by the American National Standards Institute (ANSI), American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), Federal Housing Administration, and the various building code organizations.

c. Impact of government procurement. Government agencies purchase structural fiberboard and laminated paperboard products for residential, institutional, and commercial applications. In 1990, \$5.3 million worth of these products were purchased with appropriated Federal funds. Many Federal agencies disburse funds to state and local agencies for use in building construction, renovation and repair -- activities for which use of structural fiberboard and laminated paperboard are appropriate. Therefore, EPA expects both direct and indirect procurement of these items to increase as a result of this designation.

4. Designation

In 40 CFR 247.12(b), EPA is designating structural fiberboard and laminated paperboard products. Examples of these products include building board, insulating formboard, sheathing, shingle backer, sound-deadening board, roof insulating board, acoustical and non-acoustical ceiling tile, insulating wallboard, acoustical and non-acoustical lay-in panels, floor underlayments, and roof overlay (coverboard). The designation includes both insulating and structural uses of structural fiberboard and laminated paperboard products.

C. Plastic Pipe and Fittings

1. Background

Plastic pipe applications predominantly fall into two categories: pressure and non-pressure uses. Pressure-rated applications include the oil, gas and mining industries, and pipe used for the transport of potable water. Pressure-rated pipe must be able to handle significant internal pressure, necessitating greater structural strength than non-pressure applications.

In the proposed CPG, EPA did not include pressure-rated pipe and pipe rated for carrying potable water. Several industry experts expressed concern about potential contamination of potable water from pipe made from non-virgin plastic materials. Also, because the quality and performance of recovered resins in plastic pipe are only now being evaluated, manufacturers generally have been unwilling to risk the use of recovered resins in pressure-rated pipe. Industry experts and users of pressure-rated pipe were concerned about pipe failure, which could result in physical and chemical hazards and expensive repairs.

In the proposed CPG, EPA proposed to designate plastic pipe and fittings made from thermoplastic resins, including PVC and HDPE, for the following applications: sewer, drainage, conduit, and drain, waste and vent (DWV). This proposed designation was based on the rationale that, compared to pressure applications, these non-pressure applications generally have lower internal stresses and would not impede the use of recovered materials in plastic pipe and fittings.

EPA identified 10 manufacturers of plastic pipe that use recovered materials.

2. Summary of Comments and Agency's Response

a. Performance. While one commenter supported the proposed designation of plastic pipe and fittings, EPA received numerous comments expressing concern about the possible liability and adverse effects were there to be failures of plastic pipe containing recovered materials. These commenters stated that the ASTM and American Association of State Highway and Transportation Officials (AASHTO) are currently reviewing their material specifications that preclude the use of recovered materials in plastic pipe and fittings for possible revision to allow the use of these materials. These commenters suggested that ASTM and other reliable specifications are necessary to ensure the quality of plastic pipe containing recovered materials, and that EPA should not designate plastic pipe containing recovered materials until such specifications are in place.

As described in the proposed CPG, several manufacturers have conducted performance testing on pipe made with recovered materials and demonstrated that the pipe meets applicable ASTM performance specifications. However, there currently exist ASTM and other material specifications that preclude the use of recovered materials in plastic pipe and fittings. As pointed out by commenters, there is a major effort underway to review these specifications for possible revision to allow the use of recovered materials. This effort is not yet completed. Based on the comments received, EPA has become aware that many manufacturers and users of plastic pipe do not believe that adequate testing, especially field testing, has been conducted and that designation should be delayed until such testing is conducted. For this reason, EPA has determined that it is premature to designate plastic pipe and fittings, even for non-pressure applications.

b. Product testing. Many commenters in industry and government, particularly state transportation officials, expressed a strong interest in working with EPA to overcome the barriers to using plastic pipe made of recovered materials. At least one state transportation office currently is conducting field testing of HDPE drain pipe made of recovered materials. EPA will continue to follow developments in this area and will reconsider designating plastic pipe when these barriers have been overcome. In the meantime, EPA encourages manufacturers and users of plastic pipe made with recovered materials to keep the Agency apprised of new developments in product performance testing and revision of material specifications.

3. Designation

EPA is not issuing a final designation for plastic pipe and fittings, because of the commenters' concerns described above. EPA is postponing issuance of the final designation until the issues of performance testing and materials and performance specifications have been addressed.

D. Geotextiles

1. Background

Geotextiles are permeable civil engineering fabrics used in a variety of construction applications. The four main functions of a geotextile are separation, drainage, filtration, and slope reinforcement. Depending on the application, a geotextile may serve one or more of these functions. The five main applications for geotextiles are: road building, drainage, erosion control, soil stabilization, and waste containment (e.g., landfill construction).

Geotextiles may be made of woven or nonwoven fabrics. Woven geotextiles generally are stronger than nonwoven fabrics of the same weight, and dominate the drainage, asphalt overlay, and lining systems markets. Nonwoven geotextiles generally are permeable to moisture, resistant to rot and mildew, and conform to the subgrade soils. Nonwoven fabrics dominate the stabilization and separation, and subgrade and base reinforcement markets.

In the CPG, EPA proposed to designate geotextiles for use in road building, drainage, erosion control, and soil stabilization, and for use in the gas collection layer and the protection layer between the drainage stone and the geomembrane liner in waste containment systems (see 59 FR 18871, April 20, 1994).

2. Summary of Comments and Agency's Response

Although many commenters supported the proposed designation of geotextiles, the majority of commenters opposed it.

a. Polyethylene terephthalate geotextiles. Those in support of the designation stated that there are non-woven geotextiles available made with postconsumer recovered polyethylene terephthalate (PET) and they are being used in a variety of applications. These commenters also stated that adequate performance testing has been conducted to justify the designation of geotextiles made with recovered materials.

b. Performance and polypropylene geotextiles. Commenters opposed to the proposed designation of geotextiles expressed concern that using recovered resins in geotextiles could result in catastrophic failures if used in critical applications, such as in landfills or in road construction. These commenters stated that evidence does not exist on the long-term performance of geotextiles made with recovered resin or on the chemical compatibility of geotextiles containing recovered materials when used in landfill applications. Additional commenters claimed that no manufacturers actually make geotextiles with postconsumer polypropylene, that the technology does not exist to make geotextiles with recovered polypropylene, and that high-quality postconsumer polypropylene is not available in sufficient quantities for use in making geotextiles.

EPA has not yet been able to resolve the numerous technical issues raised during the comment period. To do so would have meant a delay in issuance of the final CPG and a delay in the date on which procuring agencies would be required to begin purchasing the 19 additional

items that are being designated at this time. Thus, EPA determined that it would be best to issue the CPG for those items on which the Agency is ready to proceed and to defer a final decision on the designation of geotextiles until a future update of the CPG.

EPA will continue to track developments in this area, evaluate the issues raised by commenters, and maintain a dialog with manufacturers and users of geotextiles. EPA encourages manufacturers of geotextiles made with recovered materials to keep the Agency apprised of new products being manufactured with recovered materials, the availability of recovered polypropylene, and developments in product performance testing.

3. Designation

As explained above, EPA is not designating geotextiles at this time.

E. Cement and Concrete

1. Background

In the CPG, EPA proposed to expand the designation of cement and concrete to include cement and concrete containing ground granulated blast furnace slag (GGBF slag) (see 59 FR 18872-73, April 20, 1994). Blast furnace slag is a by-product from the production of iron and steel. Granulated blast furnace slag can be ground and blended with Portland cement for use in concrete. GGBF slag can replace up to 70 percent of the Portland cement in some concrete mixtures, but more typically, GGBF slag-Portland cement concrete mixtures contain 25 percent GGBF slag by weight.

EPA originally considered designating this item in the 1983 cement and concrete procurement guideline but had determined that GGBF slag was not sufficiently available at that time on a national scale. In the 1994 proposal, EPA noted that GGBF slag was now more widely available.

2. Summary of Comments and Agency's Response

EPA received comments from the Federal Highways Administration (FHWA), the U.S. Bureau of Mines, one steel manufacturer, three industry associations, eight states individually, and sixteen states and the Province of Ontario through the American Association of State Highway and Transportation Officials (AASHTO).

a. Characterization of blast furnace slag. The Bureau of Mines provided detailed comments on EPA's characterization of slag production and the capacity available to grind slag.

EPA incorporated the characterization information provided by the Bureau of Mines into section II.A of this document. Capacity to grind slag is addressed below in subsection E.2.b.

b. Comments opposing designation of GGBF slag. FHWA and the states opposed the designation of GGBF slag for one or more of the following reasons. (1) GGBF slag and/or cements blended with GGBF slag are not available. (2) There are concerns about the performance of GGBF slag, and all technical concerns should be answered prior to EPA's designation of an item. (3) Use of GGBF slag would compete with or replace coal fly ash. (4) Designation will create a tremendous administrative burden on FHWA and state agencies and may not create additional markets for, nor significantly increase, the usage of GGBF slag.

(1) Availability. Several state agencies questioned the availability of GGBF slag. In addition, the Bureau of Mines commented that there are only two companies with three plants that process GGBF slag for use in cement. FHWA commented that blast furnace slag granulators are located in four Eastern states: Indiana, Maryland, Ohio, and West Virginia. FHWA further noted that most states that currently use GGBF slag cements are located proximate to these four states. Other commenters questioned the availability of GGBF slag in states west of the Mississippi River, particularly in the Great Plains and Rocky Mountain states. They also questioned whether GGBF slag or granulated blast furnace slag will be available at competitive prices if shipped long distances.

Data provided by GGBF slag producers indicate that granulators currently are located at four steel plants. These granulators are capable of producing approximately 1.95 million tons of granulated slag. In 1994, approximately 60 percent of this capacity was used for the production of ground granulated blast furnace slag. Thus, there is excess capacity that could be used to supply granulated blast furnace slag for grinding into a component of cement or concrete.

EPA's Report to Congress on special wastes from mineral processing¹ indicates that in the future, most primary iron producers in the U.S. are expected to modernize their blast furnaces and install slag granulation facilities, resulting in greater availability of granulated blast furnace slag that could be used in cement and concrete. The GGBF producers commented that an additional five steel companies are considering the installation of granulation capacity at locations in six states. These commenters also indicated that ten cement manufacturers in nine states currently grind granulated blast furnace slag. Three more companies located in three additional states might begin grinding granulated blast furnace slag in 1995.

After reviewing the information submitted by all commenters, EPA concludes that GGBF slag currently is used primarily in Eastern states and states located just west of the Mississippi River. The product also has been used in states more remote from the nation's steel centers (e.g., Texas, Oklahoma, and Colorado), however. According to FHWA's data base of state specifications, both Georgia and North Dakota permit the use of GGBF slag. Since states generally do not specify a material unless it is available, the fact that these two states permit the use of GGBF slag indicates that this item can be made available to states more remote from steel

¹ "Report to Congress on Special Wastes from Mineral Processing," Volume II: Methods and Analyses, U.S. Environmental Protection Agency, Office of Solid Waste, July 1990, Chapter 8.

mills.

As discussed in section VII.B.5 of this document, section 6002 of RCRA recognizes that procuring agencies may not always be able to purchase a designated item. Section 6002 provides four exceptions to the requirement that procuring agencies must purchase items designated by EPA. Two of these exceptions are when (1) the item is not reasonably available within a reasonable period of time, and (2) the item is available only at an unreasonable price. Thus, under RCRA, if GGBF slag is not available, a procuring agency is not required to purchase it. The procuring agency must take the affirmative step of inquiring whether the item will be made available, however.

EPA has concluded that availability is no longer a barrier to designating GGBF slag. The item clearly is more widely available than in 1983, when EPA last considered designating it. Commenters indicated that it can be made available in additional states. In light of the Agency's past experience with the positive effect of an item designation on markets, EPA concludes that designation of cement and concrete containing GGBF slag will encourage additional states to consider the use of GGBF slag, thereby creating expanded markets for this item.

(2) Performance. The comments contained both positive and negative information about the performance of GGBF slag. Several states commented that they use GGBF slag for its positive attributes. According to FHWA, GGBF slag reacts with some of the by-products of the cement hydration reaction to form additional cementitious products. Both FHWA and several state agencies commented that GGBF slag is known to contribute to a reduction in alkali-silica reactivity. FHWA also commented that GGBF slag can reduce the permeability of the concrete and increase the concrete's resistance to sulfate attack, because the concrete will contain less tricalcium aluminate, the component of Portland cement which is susceptible to sulfate attack.

Commenters cited eight negative performance factors about the use of GGBF slag, although conflicting information was provided about almost all of these factors. Based on the information submitted by commenters, EPA concludes that there are instances when it is not appropriate to use GGBF slag. However, in light of the fact that there are instances where the use of GGBF slag can be beneficial, EPA believes that a designation of this item will encourage procuring agencies to learn more about this product and increase the likelihood that they will begin to purchase it where it is available.

First, commenters stated that water demand could be increased if GGBF slag is used. The State of Indiana noted that it does not allow GGBF slag from a particular source whose product has a high water absorption. The slag granulators stated that this is incorrect and cited several studies and concrete industry practice manuals which conclude that there are water savings from using GGBF slag. FHWA's final comments to EPA state "GGBF slag will generally improve the workability and reduce the water demand of a concrete," but that "some slags will have the opposite effect; that is, concrete made with them will require more water than if made without. This is due to differences in production processes between sources of GGBF slag. The possibility

of an increased water demand is not insurmountable, but it is important to remember that this situation can occur and is dependent on the source of the GGBF slag."

Second, several commenters stated that concrete containing GGBF slag is more difficult to finish (i.e., workability is decreased). The slag granulators cited several studies and concrete industry practice manuals to the contrary. As noted in the previous paragraph, FHWA's final comments to EPA state that GGBF slag will generally improve the workability of concrete, but that there have been instances where the opposite is true.

Third, commenters stated that concrete containing GGBF slag sets at a slower rate than other concretes. This can be a concern for some construction projects where it is necessary to accelerate the construction process (e.g., to return a roadway to service after repairs). Two states also commented that GGBF slag cements are not suitable for use in cold months due to the slow set time. EPA notes that 70 percent of concrete is poured in warmer months, however.

Fourth, in a related concern, commenters stated that concrete containing GGBF slag gains strength at a slower rate than other concretes. As with set time, rate of strength gain can be a concern for some construction projects where it is necessary to accelerate the construction process (e.g., to return a roadway to service after repairs). Information provided by the slag granulators indicates that the rate and level of strength gain for GGBF slag-based concretes is addressed by the concrete mix design.

Fifth, several states questioned the freeze-and-thaw durability of concrete containing GGBF slag. One of these states admitted that it had not tried the product, however. The State of Indiana commented that a laboratory evaluation of GGBF slag concrete questioned its freeze-and-thaw durability. The GGBF slag producers commented that there were problems with this laboratory evaluation, but according to FHWA, when Indiana recently performed a second laboratory evaluation, the results also indicated a lower level of freeze-and-thaw durability. By contrast, the GGBF slag producers commented that the State of Illinois had recently completed freeze-and-thaw testing and achieved suitable results. They further noted that both Pennsylvania and Virginia were satisfied with the freeze-and-thaw durability of concrete containing GGBF slag. EPA also notes that the States of Pennsylvania, Virginia, Maryland, and New Hampshire commented that they use GGBF slag concretes, and none indicated that they had experienced freeze-and-thaw problems with the product.

Sixth, the State of New York reported scaling when deicing chemicals are used. New York reported problems with a bridge made with concrete containing 50 percent GGBF slag and a sidewalk containing concrete mixes of 25-50 percent GGBF slag. Neither the GGBF slag producers nor FHWA addressed this concern in their comments. However, the Province of Ontario submitted a study that showed that the scaling resistance of concrete surfaces exposed to freezing and thawing in the presence of deicing salt was influenced by (1) the type and quantity of cementing material in the concrete mix, (2) the curing regime used, and (3) the use of high alkali Portland cement. According to the Ontario study, the use of 25 percent or less GGBF slag would

result in reduced alkali-silica reactions without increased salt scaling. The study also recommends a specific curing regime that prevents or reduces the scaling problem.

Seventh, the State of North Carolina commented that GGBF slag is suspected with other factors to have contributed to significant problems in a bridge deck. North Carolina also commented that it permits use of GGBF slag in its specifications, however, although it provided no other information about the performance of the product in other applications. From additional comments submitted by the GGBF slag producers and FHWA, it is clear that other states which use GGBF slag cements in bridge decks have not experienced problems; that no commenter could state conclusively that GGBF slag was a factor in the bridge deck problem; and that, even if GGBF slag was a factor, a combination of several factors contributed to the problems with the bridge deck, potentially including the use of a high level of retarder in the concrete mix.

Finally, the State of Idaho commented that it used slag in the past but does not currently do so because the slag may contain low levels of radiation. Potential users of GGBF slag should note that the slag used in Idaho was from elemental phosphorous production, not blast furnace slag. GGBF slag does not contain radioactive components.

After reviewing the performance comments, EPA agrees with FHWA that GGBF slag is suitable for some, but not all, concrete applications and, therefore, it should not be blindly substituted for Portland cement without regard for its effects on the characteristics of the concrete mix. EPA further agrees that education is necessary but notes that FHWA recently awarded a contract for the development of guides for the use of various recovered materials in highway construction applications. Blast furnace slag is one of the materials to be addressed. These guides should increase the information available to agencies cement and concrete containing GGBF slag.

Because the use of GGBF slag in cement and concrete can be beneficial both to users of concrete and in reducing the quantities of this material requiring disposal, EPA concludes that cement and concrete containing GGBF slag should be designated under RCRA section 6002. Under the exceptions in RCRA section 6002, in those instances where the use of GGBF slag will not meet a procuring agency's reasonable performance requirements, the agency is not required to purchase the product.

(3) Competition with coal fly ash. Several state agencies commented that coal fly ash is generated and used in their state. They stated that a designation of GGBF slag could result in reduced markets for coal fly ash because GGBF slag would compete with coal fly ash.

EPA's designation of GGBF slag does not require procuring agencies to favor this item over coal fly ash. Because it is an expansion of the existing cement and concrete designation, the GGBF slag designation simply requires that procuring agencies consider cement and concrete containing either recovered material (i.e., coal fly ash or GGBF slag). Which type of cement or concrete a procuring agency purchases will depend on a number of factors, including the

performance requirements for the construction project, product availability, competition, and product price.

(4) Administrative burden. FHWA and several states argued that cement and concrete containing GGBF slag should not be designated because the designation could create a tremendous administrative burden and might not create additional markets for nor significantly increase the usage of GGBF slag.

EPA disagrees that the designation might not create additional markets. EPA believes that there will be additional opportunities to use GGBF slag as more of it is made available and procuring agencies not currently using the item consider its use. We are also aware that procuring agencies incur costs as a result of item designation, and as explained elsewhere in this document, we have expended a great deal of effort to estimate these costs. Our estimates, based in part on FHWA's own estimates, are discussed in Section XIX of this document. While these costs are not inconsequential, they are necessary to ensure that appropriate procuring agency personnel understand the requirements of Section 6002 of RCRA and, among other things, revise specifications to favor the purchase of designated items containing recovered materials when they meet the agencies' price and performance objectives. FHWA, as a specification-writing agency, bears a larger share of these costs for cement and concrete products containing GGBF than do other agencies. As explained above, there is sufficient interest in the beneficial use of GGBF slag in cement and concrete that FHWA is developing guidance on its use. As this information becomes available, EPA believes that many more procuring agencies will begin using or increasing their current usage of GGBF slag in cement and concrete products to take advantage of its beneficial properties. Thus, we believe the designation and the attendant costs are justified.

3. Rationale for Designation

EPA believes that cement and concrete containing GGBF slag satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, approximately 90 percent of iron blast furnace slag is air-cooled, with granulated and expanded slag making up the remaining 10 percent. Approximately 75 percent of the blast furnace slag generated annually is used in aggregate applications, a smaller percentage is used in concrete, and the remainder is disposed or stockpiled.

b. Technically proven uses. It is technologically and economically feasible to process granulated blast furnace slag into an additive for cement and concrete. The granulated slag is ground into a consistency somewhat finer than Portland cement. GGBF slag replaces a portion of the Portland cement in concrete mixtures. In some concrete mixtures, GGBF slag can replace up to 75 percent of the Portland cement, on a pound for pound basis. Most concrete mixtures containing GGBF slag use between 25 and 50 percent slag, however.

FHWA commented that there are three basic types of blended cement containing GGBF slag: Type IS, which contains 25-50 percent GGBF slag; Type ISM, which contains less than 25 percent GGBF slag; and Type S, which contains over 70 percent GGBF slag. FHWA stated that Type IS is the most commonly used blended cement, while Type S is rarely used due to its slow setting rate.

Like coal fly ash, GGBF slag can improve the performance of concrete, although there is some inconsistent data about the performance of GGBF slag-Portland cement concretes, as discussed above. According to information provided by the GGBF slag producers and some state agency commenters, GGBF slag can result in higher strength; lower heat; lower permeability; better durability in marine, salt, and chemical environments; and lighter color. FHWA, several state agencies, and the Province of Ontario commented that GGBF slag can help to reduce alkali-silica reactions. FHWA also stated that GGBF slag can help provide an increased resistance to sulfate attack.

In the proposed CPG, EPA noted that the GGBF slag producers had informed EPA that GGBF slag can be used compatibly with coal fly ash and other cementitious and pozzolanic materials when used in concrete. The American Portland Cement Alliance commented that it supported the proposed designation, indicating that use of GGBF slag is accepted by the cement and concrete industry.

In the proposed CPG, EPA stated that there is approximately 1.2 million tons of domestic cement industry grinding capacity specifically devoted to the manufacture of GGBF slag. EPA also stated that five Portland cement companies operate six grinding plants to produce GGBF slag, that two Portland cement companies may begin producing GGBF slag at three locations, and that a third company recently bought a GGBF slag plant.

Corrected information provided by commenters indicates that there is 1.95 million tons of blast furnace slag granulation capacity at four locations. Ten cement companies in nine states currently grind granulated blast furnace slag into GGBF slag. According to the slag granulators, three more companies, in three additional states, will begin grinding commercial quantities of GGBF slag in 1995.

Consensus and state and Federal specifications are evidence of the performance of GGBF slag in cement and concrete. ASTM and AASHTO each have two specifications applicable to use of GGBF slag: ASTM C 989, Ground Granulated Blast-Furnace Slag for Use in Concrete Mortars; ASTM C 595, Blended Hydraulic Cements; AASHTO M 302 Ground Granulated last Furnace Slag for Use in Concrete and Mortars; and AASHTO M 240, Blended Hydraulic Cements. In addition, there is an American Concrete Institute Standard Practice, ACI 226.R1, Ground Granulated Blast-Furnace Slag as a Cementitious Constituent in Concrete.

FHWA commented that the Federal Lands Highway Division allows the use of both Type IS and Type ISM blended cements. The States of Alabama, Connecticut, District of Columbia,

Florida, Georgia, Illinois, Indiana, Maryland, Michigan, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, Virginia, and West Virginia also have adopted specifications which allow the use of GGBF slag in one or more applications.

c. Impact of government procurement. In the 1983 cement and concrete procurement guideline, EPA noted that almost one-half of total U.S. cement consumption is in public construction projects, many of which are funded with Federal funds. Factoring in usage of cement and concrete containing coal fly ash and uses for which recovered materials may be inappropriate, the potential impact of designating GGBF slag still could be substantial.

4. Designation

In 40 CFR 247.12(c), EPA is adding GGBF slag to the existing designation of cement and concrete containing coal fly ash. As discussed above, this designation does not require procuring agencies to favor GGBF slag over coal fly ash. Rather, the addition of the GGBF slag designation simply requires that procuring agencies consider cement and concrete containing either recovered material (i.e., coal fly ash or GGBF slag). Which type of cement or concrete a procuring agency purchases will depend on a number of factors, including the performance requirements for the construction project, product availability, competition, and product price.

F. Carpet

1. Background

In the CPG, the Agency proposed designating carpet (see 59 FR 18873, April 20, 1994). Broadloom carpet, meaning roll goods in 12-foot widths, for wall-to-wall installation, generally is comprised of face fibers (usually made of nylon, polyester, wool, or polypropylene) inserted into a primary backing, which is usually made of polypropylene materials. The fiber is then locked or glued into place by a layer of latex adhesive; a secondary backing made of polypropylene or jute fiber then is applied to provide stability. Carpet squares or tiles are manufactured first as broadloom carpet; however, after inserting the fiber into the primary backing, a sheet made of polypropylene or other material is added for stability, and a secondary backing made of PVC, polyurethane, or other hardback material is applied. Finally, the carpet is cut into squares, usually 18" x 18".

The majority of carpet manufactured in the U.S. is made of nylon carpet fibers, with a smaller percentage (about 10 percent) being made of polyester. Commenters provided information on the market share for various carpet fiber types. The market share for carpet fiber is approximately as follows: 67 percent nylon, 23 percent polypropylene, 10 percent polyester, and 1 percent wool.

At this time, EPA is not aware of any carpet fibers other than polyester that are manufactured with postconsumer recovered materials. Several major nylon fiber manufacturers

commented that they have initiated programs to recover used carpets from the waste stream and reprocess the nylon into new products. As these programs mature, there may be a supply of postconsumer nylon that will be suitable for the manufacture of new nylon carpet fiber. Some commenters stated that they currently reuse nylon fiber scrap in their manufacturing process. However, the commenters did not make it clear whether this scrap would be considered preconsumer material or "rework" material normally reintroduced in the manufacturing process. Further, even if this nylon fiber scrap would be considered preconsumer material, it appears that it is a standard industry practice to incorporate this material into the manufacturing process as a normal business practice to reduce raw material costs. It does not appear that these materials are truly being diverted from disposal. Thus, designating nylon carpet at this time would have little impact on diverting waste materials from disposal. Further, no commenters provided information on the percent of preconsumer nylon fiber contained in their products.

2. Summary of Comments and Agency's Response

a. Performance. Several commenters were concerned about the proposed designation of polyester carpet, stating that this item generally does not meet the performance standards for commercial applications. Commenters stated that nylon carpeting is preferred in commercial applications because of the fiber's superior performance characteristics, while polyester carpeting is mainly suited for low-wear or residential applications. Another commenter stated that nylon fibers can be made in a loop pile construction, whereas polyester fibers are typically made in a cut-pile construction which is prone to faster wear.

EPA is aware that polyester carpeting may not perform as well as nylon carpeting in high-wear and severe-wear applications. For this reason, EPA proposed to designate polyester carpet for low- and medium-wear applications only. The designation of polyester carpet applies only in those cases where procuring agencies have determined that polyester carpet has suitable performance characteristics to meet the agencies' particular applications. Where it is determined that polyester carpet is suitable, procuring agencies should purchase polyester carpet containing recovered materials.

b. Scope of designation. Several commenters believed that the terms "low and medium-wear applications" were not well defined. These commenters noted that most government agencies require carpeting for high-traffic or commercial applications, and were concerned that lack of a clear definition may encourage the use of polyester carpeting in applications where it may not be appropriate.

It is not EPA's intent to recommend the use of a product where it is not suitable. The Carpet and Rug Institute uses the following guideline in selecting the quality of carpets to be used in various areas: "light" for bedrooms, dressing rooms, and some dining rooms in private homes; "moderate" for living and dining rooms in private homes, motel and hotel bedrooms and private offices; "heavy" for commercial type installations in office buildings, public rooms, motel and hotel lobbies, stairways and stores; and "severe" for corridors, and other wheeled traffic areas.

EPA recommends that procuring agencies follow these general guidelines in determining applications that may be suitable for the use of polyester carpet containing recovered materials. EPA recommends the use of polyester carpet containing recovered materials for "light" and "moderate" applications, consistent with the types of uses in the above guidelines.

c. Impact of solid waste generation. Some commenters were concerned that, if government agencies substituted polyester carpeting in applications for which nylon or other carpeting was more suitable, the polyester carpeting may "wear out" sooner and have to be replaced more frequently. This would have the unintended effect of increasing solid waste generation.

It clearly is not EPA's intent to increase solid waste generation from the use of a carpet that is not suitable for a given application. Today's designation of polyester carpet applies only in those cases where a procuring agency has determined that the use of polyester carpet is suitable, given the performance requirements and expected wear characteristics of a given application. EPA does not intend for a procuring agency to select a polyester carpet for applications where a nylon, wool, or other carpet is better suited. However, EPA recommends that procuring agencies evaluate whether polyester carpet is appropriate to meet their needs, and, if so, to specify polyester carpet containing recovered materials.

d. Carpet containing recovered nylon. Several nylon fiber manufacturers stated that they are developing technologies to recover nylon from used carpeting through chemical recycling (i.e., depolymerization). This postconsumer nylon could be used as a feedstock to make a wide range of new products, including nylon carpet fiber. The commenters were concerned that the CPG will discourage the industry's active chemical recycling efforts, because the procurement designation currently applies only to polyester carpet.

EPA does not believe that the CPG will in any way discourage the industry's nylon recycling efforts. In fact, it has been EPA's experience with the existing procurement guidelines that item designations encourage manufacturers of similar items to begin using recovered materials too. EPA encourages the continued efforts of the nylon fiber manufacturers to develop and commercialize nylon recovery technologies and to manufacture nylon fiber with postconsumer resin content. The designation applies only to polyester carpet because that is the only type of carpet that currently is available with recovered materials content. EPA encourages nylon fiber and carpet manufacturers to keep the Agency apprised of the status of their efforts. If nylon carpet made with postconsumer recovered materials becomes available, EPA will evaluate it as a potential procurement item in a future update to the CPG.

e. Designation of carpet underlay. One manufacturer requested that EPA designate a carpet underlay made of up to 15 percent recovered tire rubber.

EPA will consider the feasibility of designating carpet underlay in a future revision to the CPG.

3. Rationale for Designation

EPA believes that polyester carpet fiber meets the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. EPA has identified two manufacturers that make carpet fiber from postconsumer PET (i.e., polyester). The main source of postconsumer PET is recovered soft drink bottles, which are washed, ground, melted, extruded, and then spun into fiber. As discussed above in section II.A, plastic, including PET, is a significant portion of the nation's municipal solid waste.

b. Technically proven uses. One manufacturer of carpet containing recovered PET offers carpet in one commercial style and 100 to 150 residential styles of carpet; the carpet is marketed nationally. The other manufacturer of carpet containing recovered PET offers carpet in 1,800 patterns and in 70 colors; the carpet also is marketed nationwide. This manufacturer currently has a contract under GSA's New Item Introductory Schedule for polyester carpet containing recovered materials. Both companies claim that their products meet applicable performance requirements. Carpet containing recovered materials has been installed in several Federal and state government buildings. For example, the U.S. Forest Service has installed a polyester carpet containing recovered materials in a visitor's center in Gainesville, Georgia; and the General Services Administration, Federal Supply Service, has installed such carpet in offices in San Francisco, California. According to the agencies' contacts, the carpet is performing well thus far; however, no data has been gathered on its wear performance.

There are numerous specifications that must be considered when purchasing carpet. ASTM has several test methods for carpet fiber, including abrasion resistance, electrostatic propensity, flammability, specific optical density of smoke, colorfastness, pilling and fuzzing resistance, and fiber tuft bind. Other organizations that have standards pertaining to carpet include the American Association of Textile Chemists and Colorists, and the Carpet and Rug Institute. During the public comment period, EPA did not receive information on any specifications that explicitly prohibit the use of carpet fiber made of recovered materials.

EPA understands that a few Federal agencies currently have specifications that preclude the use of polyester carpet for performance reasons. For example, the U.S. Army Corps of Engineers has a specification that requires the use of only nylon or wool carpet, and thereby prohibits the purchase of polyester carpet. According to an agency contact, this specification was written because the agency believed that only nylon or wool carpet could meet their performance requirements. The U.S. Navy has a specification that precludes the use of any carpeting containing synthetic materials (e.g., polyester, nylon or polypropylene) for use on ships, due to concerns of flammability in the event of a fire. The Agency recognizes that there may be valid reasons for precluding the use of polyester carpet in some applications, such as described above for the U.S. Navy; however, EPA encourages procuring agencies to review their specifications to ensure that the use of polyester carpet and, thus, carpet containing recovered materials, is not

unnecessarily precluded.

c. Impact of government procurement. The primary use of carpet in government installations is for commercial, high-wear, applications. The selection of carpet type is a decision made by each individual procuring agency. As discussed in the previous section, there are applications in government installations, including commercial and heavy-wear applications, where polyester carpet is used. Other possible uses of polyester carpet containing recovered materials include conference rooms and private offices. Use of polyester carpet containing recovered materials will create both a market for this item and demonstrate its performance characteristics.

4. Designation

In 40 CFR 247.12(d), EPA is designating carpet made of polyester fiber for use in light-wear and moderate-wear applications. The designation does not include polyester carpet for use in heavy-wear or severe-wear applications; however, procuring agencies are encouraged to evaluate the suitability of polyester carpet in these applications. The designation applies where the procuring agency determines that polyester carpet has suitable performance characteristics for a particular application. This designation does not preclude a procuring agency from purchasing carpet made of other materials, such as nylon, wool, or polypropylene. The designation simply requires that a procuring agency, when purchasing polyester carpet, purchase this item made with recovered materials.

G. Floor Tiles and Patio Blocks

1. Background

In the CPG, EPA proposed designating floor tiles and patio blocks made with recovered rubber or plastic (see 59 FR 18874, April 20, 1994). In the proposed rule, EPA also requested comment on whether there were any specifications that prohibit the use of recovered materials in the manufacture of floor tiles or patio blocks (see 58 FR 18874, April 20, 1994). The Agency received no additional information in this regard and is not aware of any specifications that preclude the use of recovered materials in the manufacture of floor tiles or patio blocks.

a. Floor tiles. Floor tiles are used in a variety of applications, including office spaces, entranceways, bathrooms, laboratories, and hallways. EPA has information on 10 manufacturers and/or distributors of floor tiles containing recovered materials. The recovered materials used in these products include rubber derived from old tires, and various plastic resins, most commonly PVC (i.e., vinyl).

Five of the 10 companies make or distribute floor tiles that contain postconsumer tire rubber. Some of these companies add a small amount of virgin rubber, adhesive fabric, or coloring agents to their products. All five of these companies market their products nationally for

applications such as entrance ways in airports and stores, furniture showrooms, skating rinks, and fitness centers.

In addition, five of these companies nationally market floor tiles made from recovered PVC, including some postconsumer resin. A few types of floor tile are made with preconsumer PVC from swimming pool liners, roof membranes, and automobile dashboard cutouts. These tiles are used in various applications, such as fitness centers, bathrooms, and cafeterias. One type of floor tile is made from 90-100 percent preconsumer recovered PVC and is used for laboratories, work stations, shopping malls, schools, restaurants, office buildings, and other applications. Another type of tile is interlocking and made of postconsumer PVC from car doors and fender strips. These tiles are generally used for heavy-duty applications such as entrance vestibules, work areas behind cashier counters, and under heavy equipment in fitness centers. EPA has no information indicating that floor tiles containing recovered materials are used in applications such as general office flooring.

b. Patio blocks. Patio blocks are used in the construction of patio areas and walkways for gardens and trails. EPA has information on six manufacturers of patio blocks made with recovered materials. The recovered materials used to make these products include rubber derived from old tires and blends of plastics resins (e.g., HDPE and LDPE), rubber and plastic, and rubber and wood.

2. Summary of Comments and Agency's Response

a. Scope of floor tile designation. The Agency did not receive any comments in opposition to its designation of floor tiles. However, commenters explained that floor tiles containing recovered materials are not typically used in certain applications, such as for standard office flooring. Commenters explained that their use has been limited to certain heavy-duty applications.

EPA is not aware of any floor tiles containing recovered materials being used in standard office flooring applications; consistent with information submitted by commenters, their use has been limited to heavy-duty, commercial applications. For this reason, EPA is limiting the recommendations contained in the Recovered Materials Advisory Notice that accompanies the final CPG to rubber and plastic floor tiles used in heavy-duty, commercial applications. If other uses, such as for standard office flooring are identified in the future, EPA will consider revising its recommendations to incorporate these applications.

b. Designation of patio blocks. The Agency did not receive any comments in opposition to its proposed designation of patio blocks.

2. Rationale for Designation

EPA believes that floor tiles and patio blocks containing recovered rubber or plastic meet

the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, both plastic and tires are significant components of solid waste. While both are being recovered, additional markets are needed.

b. Technically proven uses. Floor tiles made of recovered rubber or plastic have been used in a variety of applications, including work stations, laboratories, fitness centers, bathrooms, cafeterias, entrance vestibules, and other heavy-duty traffic areas. These uses are consistent with the way tiles are used by procuring agencies. Patio blocks made of recovered materials have been used in the construction of garden walkways and trails. EPA is not aware of any specifications that would preclude the use of recovered materials in floor tiles or patio blocks.

c. Impact of government procurement. Floor tiles are used by Federal agencies in a variety of building applications. Patio blocks are used in the design of walkways, such as for gardens or trails. Federal agencies that may use patio blocks include the U.S. Park Service, U.S. Forest Service, and the Department of Housing and Urban Development.

3. Designation

In 40 CFR 247.12(e), EPA is designating floor tiles and patio blocks containing rubber or plastic. EPA recommends that procuring agencies evaluate whether the available floor tile products containing recovered materials are suitable for the specified application, and, if so, that procuring agencies purchase floor tiles containing recovered materials. This designation does not preclude a procuring agency from purchasing floor tiles or patio blocks manufactured using other materials. It simply requires that a procuring agency, when purchasing floor tiles or patio blocks manufactured from rubber or plastic, purchase such items made with recovered materials.

XIII. TRANSPORTATION PRODUCTS

A. Temporary Traffic Control Devices

1. Background

EPA proposed designating two types of temporary traffic control devices in the CPG - traffic cones and traffic barricades (see 59 FR 18874, April 20, 1994). Temporary traffic control devices are used in a variety of situations where it is necessary to re-direct, channel, or restrict traffic in areas of highway construction or repairs. They may also be used to mark a road hazard that may exist in the way of traffic. For purposes of controlling traffic, such devices must be stable and clearly visible. Traffic cones must be able to withstand impact without damage to themselves or to vehicles. In addition, temporary traffic control devices must be manageable by work crews responsible for transporting, handling, and storing them. Definitions, applications, and requirements for traffic control devices are found in the "Manual on Uniform Traffic Control Devices" (MUTCD), which is published by the Federal Highway Administration.

a. Traffic cones. Traffic cones are conical in shape with a broadened and weighted base, making them able to withstand significant wind gusts without tipping or blowing away. In order to be able to withstand an impact without damaging a vehicle, the upper component of a traffic cone is typically made from LDPE or PVC plastic. The lower component of a traffic cone is typically made from a rubber or plastic material capable of providing ballast and friction with the surface of the roadway. Typical applications for traffic cones are described in section 6C-4 of the MUTCD.

EPA identified several manufacturers and distributors of traffic cones containing postconsumer LDPE and PVC materials, as well as crumb rubber from scrap tires. In general, both recovered and postconsumer recovered plastics are used in the upper component of the cones, and crumb rubber and/or plastics are used in the base.

b. Traffic barricades. There are three types of traffic barricades: Type I, Type II, or Type III. Type I or Type II barricades are intended for use in situations where traffic is maintained through an area being constructed and/or reconstructed. Type III barricades are used when a road section is to be closed-off to traffic. Applications for traffic barriers are described in section 6C-9 of the MUTCD.

Traffic barricades are typically made from wood, steel, plastic, or a combination of these materials. The traditional design of the barricades typically involves the use of steel in the supporting frame and wood in the cross rails. In past years, many manufacturers of traffic barricades have shifted to the use of recovered materials in both the supporting frame and rails of the barricades. Manufacturers are able use recovered materials to manufacture the housing and lenses used in lighting devices affixed to the barricades as well.

EPA identified several manufacturers and distributors of Type I and Type II traffic barricades containing recovered fiberglass and plastics, including HDPE, and blends of HDPE and PET or LDPE.

EPA acknowledges that the wood panels used in the manufacture of certain traffic barricades may contain recovered wood and additionally acknowledges that all of the steel used in the manufacture of traffic barricades contains recovered scrap metal. The Agency is also aware that some traffic barricades are made with recovered steel and, in the proposed CPG, requested information on the use of both recovered wood and steel in the manufacture of traffic barricades (see 59 FR 18875, April 20, 1994). Commenters submitted some information regarding the use of recovered steel in the manufacture of steel products. This information is discussed in the supporting analyses for the related RMAN also located in the RCRA public docket.

c. Other traffic control devices. Other temporary traffic control devices, such as tubular markers, drums, or vertical panels, can serve the same purposes as traffic cones and barricades. Tubular markers are defined in section 6C-3, vertical panels in section 6C-5, and drums in section 6C-7 of the MUTCD.

EPA identified one manufacturer of vertical panels using recovered polypropylene and crumb rubber and one manufacturer of tubular markers using recovered PVC and crumb rubber. Because there would be insufficient competition in supplying these two items containing recovered materials, EPA did not propose to designate these items. In addition, because EPA was unable to identify any manufacturers of drums using recovered materials, the Agency also did not propose to designate drums.

2. Summary of Comments and Agency's Response

a. Designation of traffic cones and traffic barricades. No commenters opposed the designation of either traffic cones or traffic barricades.

b. Other devices. No commenters opposed the decision not to designate other types of traffic control devices.

3. Rationale for Designation

EPA believes that temporary traffic control devices satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, plastic and rubber are significant components of the solid waste stream. Both of these materials are technically and economically feasible to recover for reuse, and additional markets for them are needed.

Many manufacturers of traffic control devices are currently working to increase the

amounts of postconsumer plastic and rubber used in their products.

b. Technically proven uses. Temporary traffic control devices made with recovered materials have been produced in the U.S. for several years. Manufacturers have been using high percentages of crumb rubber buffings in the lower component of traffic cones since the conception of this device, but have not advertised this fact. The substitution of recovered materials in the plastic components of traffic control devices is technically and economically feasible in this application. This is evidenced by the substantial increase in the procurement of these items by state agencies. A recent multi-state procurement led by the State of New York involved more than 30,000 traffic cones made with 50 percent total recovered materials and 6 percent postconsumer materials. A recent procurement by a large city involved more than 300 traffic barricades made with 100 percent postconsumer recovered content.

Temporary traffic control devices must be stable and clearly visible. Traffic cones must be able to withstand impact without damage to themselves or to vehicles. In addition, temporary traffic control devices must be manageable by work crews transporting, handling, and storing them. General performance requirements for temporary traffic control devices involve appearance, size, weight, and durability. Manufacturers are currently able to use recovered materials successfully in the production of these devices and meet applicable performance specifications.

Section 635 of "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85" contains the Federal specifications for temporary traffic control devices. EPA examined the specifications, and found that section 635.02 does not preclude the use of recovered materials in temporary traffic control devices. Further, the Federal specifications reference the requirements contained in the MUTCD, which also do not preclude the use of recovered materials.

In addition to the Federal specifications, state procuring agencies may have additional materials or performance requirements for temporary traffic control devices. Several state procuring agencies have additional requirements and programs to test or confirm material properties of traffic control devices prior to acceptance of shipment. Most of the currently available traffic barricades containing recovered materials are able to meet or exceed specific state requirements. In addition, at least five states explicitly specify a preference for traffic control devices made from recovered materials. One commenter representing several state highway departments stated that the problems associated with the use of reclaimed materials in temporary traffic control devices are expected to be minimal.

EPA believes that, as procuring agencies begin to obtain current information about traffic control devices made with recovered materials, they will find that these devices meet their performance requirements and will increase usage of these products.

c. Impact of government procurement. Government agencies purchase, or use

appropriated Federal funds to purchase, temporary traffic control devices. The Federal government represents a large share of the market for traffic control devices, including traffic cones and barricades. State highway departments use monies from the Federal Highway Trust Fund to complete major construction and renovation projects, in which the use of traffic control devices is extensive. Other major users of traffic control devices include the Department of Transportation, Army Corps of Engineers, and Department of Interior.

4. Designation

In 40 CFR 247.13, EPA is designating two types of temporary traffic control devices used in controlling or restricting vehicular traffic -- traffic cones and traffic barricades.

XIV. PARK AND RECREATION PRODUCTS

A. Playground Surfaces and Running Tracks

1. Background

In the CPG, EPA proposed designating playground surfaces and running tracks containing recovered rubber or plastic (see 59 FR 18876).

a. Playground surfaces. EPA has identified 20 manufacturers/distributors of playground surfaces made with recovered materials. These companies offer products made of postconsumer rubber derived from old tires. Three of these companies use other recovered materials as well, including blends of rubber/asphalt, rubber/compost, and rubber/PVC. One of these companies also makes playground surfaces containing postconsumer PVC.

Playground surfaces made of rubber are often more desirable than other surfacing materials, such as wood chips, sand, and asphalt, because they can provide more cushioning, reduce injuries and abrasions, and may be safer for children.

b. Running tracks. Some of the companies that make playground surfaces also make running tracks containing postconsumer tire rubber. Prior to issuance of the proposed CPG, EPA obtained information from four of these companies, which indicated that they offer running tracks made of high percentages of postconsumer rubber. Some of the companies use either a layer of virgin resin to provide added spike resistance, or small percentages of preconsumer recovered rubber for coloring. One of these companies constructed the 1984 Olympic running tracks with recovered materials, and has constructed running tracks for universities, schools, and state governments.

2. Summary of Comments and Agency's Response

No commenters opposed the proposed designations of playground surfaces and running tracks.

3. Rationale for Designation

EPA believes that both playground surfaces and running tracks satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. Playground surfaces and running tracks can contain recovered rubber and PVC. As discussed above in section II.A, both of these materials are significant components of municipal solid waste, and PVC is also found in construction and demolition debris.

b. Technically proven uses. The companies surveyed by EPA have sold playground surfaces made with recovered materials for a variety of installations, including McDonalds' playgrounds, schools, and military bases. Running tracks made of recovered rubber have also been constructed at universities, schools, military bases, the U.S. Olympics, and the White House.

GSA does not have specifications for playground surfaces or running tracks; however, Federal agency installations of these products must comply with applicable state or local construction codes, as well as the Consumer Product Safety Commission standards and the Americans With Disabilities Act. The Consumer Products Safety Commission requires that playground surfaces meet certain performance standards to reduce head injuries, including ASTM specification F 1292, pertaining to impact attenuation standards. Playground surfacing and running tracks must also comply with the Americans With Disabilities Act, which provides that mobility-impaired persons cannot be prohibited from access to public places.

c. Impact of government procurement. Playground surfaces and running tracks are used by Federal agencies for installation at military bases and parks and recreation facilities. Playground surfaces are also used in day care centers and housing developments.

4. Designation

In 40 CFR 247.14, EPA is designating playground surfaces and running tracks containing recovered rubber or plastic. This designation does not preclude a procuring agency from purchasing playground surfaces or running tracks manufactured using other materials. It simply requires that a procuring agency, when purchasing playground surfaces or running tracks manufactured from rubber or plastic, purchases such items made with recovered materials.

XV. LANDSCAPING PRODUCTS

A. Hydraulic Mulch

1. Background

In the CPG, EPA proposed designating hydraulic mulch products used for landscaping and erosion control in hydroseeding applications and as an over-spray for straw mulch (see 59 FR 18877, April 20, 1994). Hydraulic mulch is made of small pieces of cellulose fibers, which can be either wood or paper. It is applied to a soil surface by mechanical spraying, usually in a process known as hydroseeding, which involves spraying a mixture of water, seeds, and the hydraulic mulch over soil. The mulch provides stability for the soil, preventing erosion, and provides protection and warmth for the seeds, facilitating germination.

2. Summary of Comments and Agency's Response

No commenters opposed the proposed designation of hydraulic mulch.

3. Rationale for Designation

EPA believes that hydraulic mulch products satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, paper is a significant component of the solid waste stream. Construction and demolition debris contains a significant percentage of wood. Although recovered paper is used by the pulp and paper industry, there continues to be a need for additional markets for this material.

b. Technically proven uses. EPA is aware of at least 37 manufacturers of paper-based hydraulic mulch located throughout the U.S. There also are several manufacturers of wood-based hydraulic mulch using recovered wood.

The hydraulic mulch industry is divided on the benefits and drawbacks of paper-based and wood-based hydraulic mulch. Manufacturers of each item claim superior performance of their products. It is EPA's understanding that the International Erosion Control Association is developing performance standards for hydraulic mulch to resolve the dispute over performance.

c. Impact of government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, hydraulic mulch products. EPA estimated the 1990 expenditures for these products to be \$10-15 million, or approximately 50 percent of the hydraulic mulch industry's total revenues. The Federal government represents a large share of this market, because hydraulic mulch products are used extensively in highway construction funded with monies from the Federal Highway Trust Fund. Other major federal users of seeding

products are the General Services Administration, Forest Service, Army Corps of Engineers, and several bureaus within the Department of Interior. In addition, Federal grant monies from the Department of Housing and Urban Development can be used in landscaping and other soil management activities.

In the proposed CPG, EPA noted that the States of California, Illinois, Michigan, Pennsylvania, Texas, Virginia, and Washington allow the use of paper-based hydraulic mulch. The States of Missouri and New Hampshire commented that their specifications permit the use of this product in one or more applications. In addition, the State of Georgia commented that its specifications allow the use of wood-based hydraulic mulch products and that use of paper-based hydraulic mulch products should not present a significant problem.

Based on the successful usage of paper-based hydraulic mulch by several of the states and by Federal agencies, EPA believes that usage of this product will increase as procuring agencies begin to obtain current information about the performance characteristics of paper-based hydraulic mulch and begin to use the products currently available.

4. Designation

In 40 CFR 247.15(a), EPA is designating hydraulic mulch products used for landscaping and erosion control in hydroseeding applications and as an over-spray for straw mulch. This designation includes both paper-based hydraulic mulch and wood-based hydraulic mulch containing recovered materials. Potential uses include reseeding and soil stabilization during highway construction; seeding during pipeline installation, mine site reclamation, and landfill closure; residential, institutional, and commercial landscaping; temporary erosion control at construction sites; and seeding of athletic fields and golf courses.

B. YARD TRIMMINGS COMPOST

1. Background

In the CPG, the Agency proposed designating yard trimmings compost (see 59 FR 18877, April 20, 1994). Composting is a biological process of stabilizing organic matter under controlled conditions into a product that is rich in humus and provides organic matter, cation exchange and nutrients to the soil. Compost has been defined in the "Composting Glossary" by the Compost Council, an industry trade group, as follows:

Compost is the stabilized and sanitized product of composting; compost is largely decomposed material and is in the process of humification (curing). Compost has little resemblance in physical form to the original material from which it was made. Compost is a soil amendment, to improve soils. Compost is not a complete fertilizer unless amended, although composts contain fertilizer properties, e.g., nitrogen, phosphorus, and potassium, that must be included in calculations for

fertilizer application.

Composting serves as an alternative method of managing those organics that would otherwise be landfilled. Although up to 60 percent of municipal solid waste is potentially compostable (including food and paper), yard trimmings are the least controversial feedstock for compost. Yard trimmings composting returns grass, twigs, and leaves to the soil. When grass clippings are included with leaves and other yard trimmings, the resulting compost can serve as a suitable nitrogen source with an optimal carbon/nitrogen ratio for many applications. A significant portion of the yard trimmings is being composted, and the percentage is increasing. Only 651 yard trimmings composting facilities were operating in 1988. This increased to more than 2,200 yard trimmings composting facilities at the end of 1991, continuing to increase to nearly 3,000 facilities at the end of 1993. Thus, the quantity of compost available from local sources is expected to increase in the near future.

There is currently not a large amount of compost produced from mixed municipal solid waste produced in the U.S. As of February 1993, there were 20 mixed municipal solid waste composting facilities in operation, 10 pilot programs, and about 60 projects under development. The amount of compost being produced from food scraps is even smaller, with much of the current production coming from pilot projects.

High quality compost is fully "mature," which means that the composting process is completed. Mature compost is free of pathogens and weed seeds. Compost is used as a soil conditioner, soil amendment, lawn top dressing, potting soil mixture, rooting medium, and mulch for shrubs and trees, and for improvement of golf and other sports turf. It has also been used in erosion control, certain pollution prevention procedures (used to permanently bind heavy metals in contaminated soils) and for soil reclamation. Compost can be used in agriculture, horticulture, silviculture (growing of trees), and in landscaping. Compost can also be used in land reclamation and revegetation of roadsides after road construction. An important consideration for the compost purchaser is the availability of sufficient quantities of high quality compost and certainty that it is of sufficiently high quality for its intended use. Because of the high volume of yard trimmings currently discarded each year, there is no current shortage of raw materials that would preclude composting facilities from supplying large volumes of yard trimmings compost. Taken together, yard composts, biosolids compost and mixed municipal composts are the most rapidly growing recycled content products.

2. Summary of Comments and Agency's Response

a. Support for compost designation. EPA received four comments specific to its proposal to designate yard trimmings compost as a guideline item in the CPG. Three commenters expressed general agreement that yard compost should be a designated item.

b. National standards for compost. One commenter expressed concern about the proposed designation of yard trimmings compost because there are a lack of national standards for this item.

The Agency does not believe that a lack of national standards will inhibit the general use of yard trimmings compost, or that national standards are a necessary prerequisite for its designation. As noted in the preamble to the proposed rule, compost can have many different applications, each of which may require compost with differing characteristics. For instance, using compost for turf establishment would typically require a mature, cured compost, while an application for landfill cover might utilize less mature compost. As explained in EPA's draft RMAN issued concurrently with the proposed CPG, the State of Maine has developed quality standards for six different types of compost ranging from topsoil (three classes), to wetlands substrate, to mulch (two classes) (see 59 FR 18906, April 20, 1994). These standards are being used by many state agencies in purchasing compost and can serve as a guide to anyone purchasing this item. In addition to the guidance afforded by the State of Maine's quality standards, compost suppliers can assist procuring agencies in determining the type(s) of compost needed for particular applications. The agency recommends, therefore, that when purchasing yard trimmings compost, the specific use of the compost should be described to the supplier to ensure the purchase of a product compatible with the intended use.

In the preamble to the proposed CPG, EPA also noted that the Composting Council, a diverse group of professionals engaged in promoting the beneficial use of compost, as well as a number of state agencies, are developing standards and specifications for compost (see 59 FR 18878, April 20, 1994). As these standards are developed, EPA will make their availability known to procuring agencies by referencing them in a future Recovered Materials Advisory Notice.

3. Rationale for Designation

EPA believes that yard trimmings compost satisfies the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, yard debris (leaves, lawn clippings, bush and tree trimmings) comprise 16 percent of the municipal waste stream. These materials can be composted and used as soil amendments, rather than landfilled or incinerated. Thus, the use of compost can significantly reduce the amount of yard trimmings, grass clippings, and leaves disposed in landfills and reduce one source of methane emissions from landfills.

b. Technically proven uses. Adding compost to soils can improve their suitability for plant growth. The organic matter in compost is particularly beneficial in poor soils. Adding compost to clay soils reduces soil density and compaction, increases aeration, and increases soil porosity and drainage. These changes lessen the danger of root rot disease. Compost added to sandy soils binds soil particles to increase water and nutrient retention, as well as resistance to drought and erosion.

The Composting Council is helping to define and develop industry-wide standards for

composts made from various combinations of these materials. The standards will include a Standard Operating Guide for composting facilities, which is currently available in draft form from The Composting Council, as well as standards for suitability of different types of composts for different markets, depending on the content of the compost.

Other advantages of compost, in addition to organic materials and nutrients being returned to the soil are the following:

- The soil tilth and soil structure are improved.
- Soil temperature is moderated, so that plant roots are warmed in winter and, through water retention, are cooler in dry, hot conditions.
- Increased organic content increases soil microbial activity, which fosters plant growth.
- Compost creates a favorable environment for earthworms that help aerate soil and allow water to reach plant roots.
- Mature composts suppress some plant diseases, such as wilt and root rot, which reduces the need for chemical pesticides and fungicides.
- All compost nutrients, such as nitrogen, are in organic form and, therefore, are released slowly over time. The use of compost can reduce the need for fertilizer by at least 50 percent.
- Because less fertilizer and fewer pesticides are needed, pollution from non-point source run-off can be reduced.

(i). Disease control. Research conducted at Ohio State University and verified in Florida, Pennsylvania, Alabama, and elsewhere, shows that compost can replace part and, in some cases, all of the fumigants and fungicides used on food crops or landscape projects on Federal lands. When compost of bark and other materials is used in potting mixes, this will prevent rotting of seedlings and roots caused by certain organisms. Also, compost has been shown to be important in controlling wilt disease in certain flowers commonly grown for indoor use. Specifically, compost prevents fusarium wilt disease on cyclamens, which is important because there are no fungicides available which can do so. Other projects have demonstrated that the use of compost can control disease and result in reduced use of fertilizers, which can leach into surface waters.

(ii). Benefits for soil reclamation. Compost can be used in soil reclamation projects. The fine organic composition increases the soil's water-holding capacity. Compost also increases water infiltration into the soil. The formation of compost-soil aggregates reduces soil compaction, increases soil friability and, therefore, decreases the erodability of soil. The nutrient and organic carbon content of compost serve as a food source for soil microbes, thus increasing the availability of the soil's organic and nutrient content to plants at a rate compatible with plant uptake and aiding faster recycling of nutrients within the system. Finally, there are water-stable aggregates that are formed from the microbial by-products that prevent the formation of surface crusts on soil, which can inhibit seedling growth.

c. Impact of government procurement. Military installations alone have about 20 million acres of land. The potential compost usage (at 40 cubic yards per acre) for even part of this acreage would be immense. In addition, the Forest Service and Park Service maintain 500,000 miles of roadsides and embankments. Therefore, the Federal market for compost made with yard trimmings, leaf compost, and/or grass clippings could be substantial.

4. Designation

In 40 CFR 247.15(b), EPA is designating compost made from yard trimmings, leaves, and/or grass clippings for use in landscaping, seeding of grass or other plants on roadsides and embankments, as a nutritious mulch under trees and shrubs, and in erosion control and soil reclamation. As noted above, the number of mixed municipal compost and food scrap composting facilities in the U.S. is limited. For this reason, EPA is not including compost made with mixed municipal solid waste and/or food scraps in this designation.

XVI. NON-PAPER OFFICE PRODUCTS

A. Office Recycling Containers and Office Waste Receptacles

1. Background

In the proposed CPG, the Agency proposed designating office recycling containers and waste receptacles made from paper, plastic, and steel (see 59 FR 18878, April 20, 1994). These containers and receptacles include all indoor receptacles used for the collection and transport of waste and/or recyclable materials, such as deskside containers, centralized containers, and other containers for collecting and transporting waste and/or recyclables. Desk tray style recycling containers are covered under section XVI.B of this document, which discusses plastic desktop accessories.

a. Paper containers. Corrugated paper office recycling containers are available through GSA's Special Order Program. GSA literature refers to these products as being made of "fiberboard." Recycling containers made from corrugated or other paper products are covered under the paperboard section of EPA's procurement guideline for paper and paper products (Section A of the RMAN that accompanies the CPG).

Currently, EPA has information only on paper recycling containers made from corrugated paper. However, since office recycling containers and office waste receptacles are similar in their manufacture and basic materials content, EPA believes that this information is also applicable to office waste receptacles made from other recovered paper products.

b. Plastic containers. Plastic office recycling containers and office waste receptacles are made primarily from HDPE or LDPE, but EPA is aware of at least one vendor that manufactures

these items using commingled plastic resins.

c. Steel containers. Steel containers are available that are made from recovered materials. According to a recent article published by the Steel Recycling Institute, all steel products contain either 25 or 30 percent recovered steel or virtually 100 percent recovered materials content when made with North American Steel ("The Recycling Magnet", Fall 1994). Based on this information, the Agency believes that office recycling containers and waste receptacles made from steel contain similar percentages of recovered materials.

2. Summary of Comments and Agency's Response

a. Scope of designation. One commenter questioned EPA's proposed designation of steel office recycling containers and office waste receptacles, stating that the amount of steel used to manufacture such items is inconsequential when compared to the amount of steel produced in the U.S. Another commenter stated that the designation of recycling containers and waste receptacles made from multiple materials (i.e., plastic, steel, and paper) could encourage the purchase of plastic and paper containers rather than the traditional steel containers.

EPA encourages the use of all recovered materials in products and does not favor one material over another. If EPA did not include steel containers in its designation, procuring agencies might assume that EPA was recommending the use of plastic or paper containers only, when this is not the case. Additionally, steel containers made from recovered materials are readily available as are containers made from plastic and paper. For these reasons, the Agency believes it is appropriate to designate containers made from steel, paper, and plastic. EPA also believes that the type of containers purchased should be the sole decision of the procuring agencies and that they can best choose the product that meets their needs.

3. Rationale for Designation

EPA believes that office recycling containers and office waste receptacles satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, plastics, paper, and steel are significant components of the solid waste stream.

b. Technically proven uses. EPA is aware of at least four manufacturers that produce office recycling containers and office waste receptacles using recovered plastic. In addition, plastic containers are available through GSA's Federal Supply Schedule 72 VII B, "Recycling Collection Containers and Specialty Waste Receptacles." GSA also has corrugated recycling containers available through its Special Order Program. EPA is also aware that there are manufacturers that produce office recycling containers and waste receptacles made from steel.

According to the information available to EPA, there are no national or Federal

specifications that preclude the use of recovered materials in the manufacture of office recycling containers and office waste receptacles. In lieu of referencing national or Federal specifications, procuring agencies usually incorporate recovered materials content requirements into their solicitation or contract documents when purchasing these products.

c. Impact of government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, office recycling containers and office waste receptacles. EPA does not have specific data on the number of office recycling containers and office waste receptacles procured by government agencies, although EPA expects that the quantities are significant. Thus, the Agency believes that these items are procured in sufficient quantities to support the designation of these items.

4. Designation

In 40 CFR 247.16(a), EPA is designating office recycling containers and office waste receptacles made from plastic, paper, and steel, as items that are or can be made with recovered materials. This designation includes all indoor receptacles used for the collection and transport of waste and/or recovered materials, such as deskside containers, centralized containers, and other containers for collecting and transporting waste and/or recyclables, and other items as determined by the procuring agency. This designation does not preclude a procuring agency from purchasing containers or receptacles manufactured using other materials, such as wood. It simply requires that a procuring agency, when purchasing office recycling containers or office waste receptacles manufactured from plastic, paper, or steel, purchase such containers made with recovered materials.

B. Plastic Desktop Accessories

1. Background

In the CPG, the Agency proposed designating plastic desktop accessories containing recovered materials (see 59 FR 18879, April 20, 1995). Plastic desktop accessories include desk organizers, desk sorters, desk trays, letter trays, memo pad holders, note pad holders, and pencil holders. They are typically made from polystyrene and are manufactured by injection-molding. These items are grouped together due to their similarity in manufacture and composition.

Currently, EPA has information on plastic desktop accessories made from postconsumer recovered polystyrene only. In the proposed rule, EPA requested information on desktop accessories made from other recovered materials and the recovered materials content levels of those products (see 59 FR 18879, April 20, 1994). During the public comment period, the Agency did not receive any additional information in this regard.

2. Summary of Comments and Agency's Response

No commenters opposed the proposed designation of plastic desktop accessories.

3. Rationale for Designation

EPA believes that plastic desktop accessories satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, plastics represent a significant component of the solid waste stream.

b. Technically proven uses. EPA is aware of at least three manufacturers that produce plastic desktop accessories with postconsumer recovered materials content. In addition, several office products distributors carry these accessories as part of their product lines. GSA also makes these products available through its Federal Supply Schedule.

According to the information available to EPA, there are no national or Federal specifications that preclude the use of recovered materials in the manufacture of plastic desktop accessories. In lieu of referencing national or Federal specifications, procuring agencies usually incorporate recovered materials content requirements into their solicitation or contract documents when purchasing these products.

c. Impact of government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, plastic desktop accessories. EPA does not have specific data on the number of plastic desktop accessories procured by government agencies. However, EPA believes that these items are procured in sufficient quantities to support the designation of these items.

4. Designation

In 40 CFR 247.16(b), EPA is designating plastic desktop accessories as items that are or can be made with recovered materials. This designation includes desk organizers, desk sorters, desk trays, letter trays, memo pad holders, note pad holders, and pencil holders, and other items as determined by the procuring agency. This designation does not preclude a procuring agency from purchasing desktop accessories manufactured from another material, such as wood. It simply requires that a procuring agency, when purchasing plastic desktop accessories, purchase these accessories made with recovered materials. EPA encourages agencies purchasing desktop accessories made with other materials to seek these items containing recovered materials as well.

C. Toner Cartridges

1. Background

In the CPG, the Agency proposed designating remanufactured toner cartridges (59 FR 18879, April 20, 1994). Toner cartridges are defined as toner cartridges used in laser printers, photocopiers, facsimile machines, or microphotographic printers. Remanufactured toner cartridges are further defined as toner cartridges that have been remanufactured in accordance with the procedures set forth in GSA's Standard Procedure FCG-STD-111.

At proposal, EPA provided information regarding the recycled toner cartridge preference provision set forth in 42 U.S.C. 6962j. Section 1554 of the Federal Acquisition Streamlining Act of 1994 (FASA) (Pub. L. 103-355) repealed this provision, removing any reference to procurement of toner cartridges from RCRA.

2. Summary of Comments and Agency's Response

EPA received several comments on the proposed designation of remanufactured toner cartridges. In general, these comments fell into four categories: scope of designation, product quality, actions of Congress, and disposition of expended cartridges.

a. Scope of designation. Two commenters contested EPA's designation of remanufactured toner cartridges, citing RCRA section 6002(e)(1) and Executive Order 12873 as requiring EPA to designate items made with "recovered," not "remanufactured" materials. The commenters further stated that, should EPA proceed with its designation of remanufactured toner cartridges, it should expand the designation to include replacement toner cartridges made from recovered materials as well.

EPA believes that the designation of remanufactured toner cartridges is consistent with the directives contained in RCRA section 6002 and Executive Order 12873. EPA believes that the reuse of materials in remanufacturing operations falls within the statutory definition of "recovered materials" in that these are materials "which have been recovered or diverted from solid waste, but ... not ... generated from, and commonly reused within, an original manufacturing process." Additionally, in 1988, the Agency designated retread tires as a guideline item (53 FR 46558, November 17, 1988). Retread tires are also remanufactured items.

EPA now has information that toner cartridges made with recovered materials are available for purchase. Thus, EPA agrees with the commenters that it is appropriate at this time to designate toner cartridges made with recovered materials as well as remanufactured toner cartridges. Therefore, the Agency has changed its designation from "remanufactured toner cartridges" to "toner cartridges" to include replacement cartridges made with recovered materials.

b. Product quality. Two commenters expressed concern that remanufactured toner

cartridges are of poorer quality than new cartridges. One commenter stated that GSA's Standard Procedure does not establish the technical performance standards necessary to ensure consistent quality.

EPA disagrees with the commenters. EPA's research shows that tests conducted by an independent testing laboratory indicate that, in general, the quality of remanufactured cartridges is comparable to that of new cartridges. In fact, when price is considered and all other factors are equal, remanufactured toner cartridges may be more appealing.

The Agency notes that, as with any product, the quality of a remanufactured toner cartridge is dependent on the condition of the cartridge itself and the process used to remanufacture it. EPA believes, that, at this time, the GSA Standard Procedure provides the minimum steps necessary to ensure product quality. EPA further recommends that, prior to ordering large quantities of remanufactured toner cartridges from a single vendor, purchasers test the cartridges to ensure they are satisfied with the quality of the product.

c. Actions of Congress. One commenter raised concern that the remanufactured toner cartridge designation is inconsistent with Congressional intent to streamline the Federal acquisition process, citing the recent repeal of the toner cartridge preference provision in 42 U.S.C. 6962j.

As noted in section XVI.C.1 above, Section 1554 of the Federal Acquisition Streamlining Act (Pub. L. 103-355) (FASA) repealed the preference for procurement of recycled toner cartridges. EPA sought and obtained the following information from Congressional staff concerning this action.

(i). Background. Section 630 of the Treasury, Postal Service and General Government Appropriations Act, 1993 (Pub. L. 102-123), amended 42 U.S.C. 6962 by adding a new section requiring Federal agencies to purchase recycled toner cartridges (42 U.S.C. 6962(j)). The following year, Section 401 of the Treasury, Postal Service and General Government Appropriations Act, 1994 (Pub. L. 103-123), amended and replaced 42 U.S.C. 6962(j). Federal agencies were no longer "required" to purchase recycled toner cartridges, but they were "authorized to give preference to" remanufactured toner cartridges.

As part of the FASA development process, Congress sought to streamline the acquisition process by removing unnecessary and confusing provisions affecting Federal procurement. One of the provisions included in this effort was the toner cartridge preference provision at 42 U.S.C. 6962j.

(ii). Congressional intent. According to Congressional staff, Congress believed that by changing the "requirement" to purchase recycled toner cartridges to a "preference," the 1994 amendment stripped this provision of its regulatory authority. In addition, Congress was aware of EPA's proposal to designate remanufactured toner cartridges in the proposed CPG and

determined that, if EPA designated toner cartridges in the final CPG, the presence of the voluntary procurement provision in 42 U.S.C. 6962(j) would only create confusion among procuring agencies and product manufacturers.

d. Disposition of spent cartridges. Two commenters emphasized the importance of collecting and returning expended toner cartridges for remanufacturing/recycling purposes.

EPA agrees and encourages procuring agencies to collect their empty cartridges and return them to vendors for remanufacturing/recycling purposes.

3. Rationale for Designation

EPA believes that toner cartridges satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. According to research conducted by BIS Strategic Decisions, 27.75 million toner cartridges were produced for the U.S. market in 1993. Of these cartridges, 71 percent were new cartridges and 29 percent were remanufactured cartridges. Based on these data, the Agency is convinced that a significant number of expended toner cartridges are diverted from the solid waste stream by toner cartridge remanufacturing and recycling efforts and encourages government agencies to collect their empty cartridges and return them to vendors for remanufacturing/recycling purposes.

b. Technically proven uses. Toner cartridges are commonly used by government agencies and private businesses.

(i). Remanufactured toner cartridges. Toner cartridge remanufacturing services are available and increasing in usage. Over the past few years, the number of vendors that offer toner cartridge remanufacturing services has increased substantially. As of December 1994, GSA's New Item Introductory Schedule for remanufactured toner cartridges listed 117 vendors. In addition, GSA has two vendors that provide remanufactured toner cartridges to its supply program. Also, Federal Prison Industries remanufactures a broad line of toner cartridges for laser printers, copiers, and facsimile machines.

The performance of a remanufactured toner cartridge can vary based on the condition of the cartridge and the process used to remanufacture it. Currently, there is no Federal testing program for remanufactured toner cartridges; however, there are at least two independent laboratories that have vendor cartridge quality testing and evaluation programs. In addition, GSA has established procedures by which remanufacturers providing remanufactured toner cartridges to its supply program are to disassemble, clean, replace parts within, refill, and reassemble expended cartridges. Several states, including Wisconsin, Connecticut, and Mississippi, also have performance requirements in their specifications for remanufactured toner cartridges.

(ii). New toner cartridges made with recovered materials. EPA is aware of at least two manufacturers that produce new toner cartridges with recovered materials content. EPA is not aware of any Federal or national specifications that preclude the use of recovered materials in the manufacture of new toner cartridges.

c. Impact of Government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, toner cartridges. EPA does not have specific data on the number of toner cartridges procured by government agencies, although EPA estimates that the quantities are substantial. Thus, the Agency believes that these items are procured in sufficient quantities to support the designation of these items.

4. Designation

In 40 CFR 247.16(c), EPA is designating toner cartridges as items that are or can be made with recovered materials. This designation includes remanufactured toner cartridges, toner cartridge remanufacturing services, and new cartridges made with recovered materials.

D. Binders

1. Background

In the CPG, the Agency proposed designating three types of binders: chipboard, vinyl or plastic-covered chipboard or paperboard, and cloth-covered chipboard or paperboard (see 59 FR 18880, April 20, 1994). Chipboard binders are considered paperboard products and are manufactured with high percentages of postconsumer recovered paper. The chipboard or paperboard component of a cloth-covered binder is made with high percentages of postconsumer recovered paper. In plastic-covered binders, the paperboard or chipboard component is usually covered with vinyl or another plastic, such as polyethylene, and may have another clear plastic coating over the vinyl or other plastic. Many binders, such as the three-ring binders, also contain steel components which are universally made from recovered steel.

In the proposed CPG, EPA requested information on other types of binders made with recovered materials and the levels of recovered materials contained in these binders (see 59 FR 18880, April 20, 1994). The Agency received additional information on pressboard binders. Pressboard is a higher-strength paperboard that, when used for binders, is not covered by cloth or plastic. Two commenters explained that EPA had erred in not including pressboard binders in the proposed designation. Pressboard, like chipboard and paperboard, is made with high levels of postconsumer paper and paper products and is, in fact, used in the manufacture of binders. The Agency inadvertently omitted reference to pressboard binders in the proposed CPG designation for binders and has now included them in the final designation.

2. Summary of Comments and Agency's Response

a. Chipboard binders. One commenter stated that he was not aware of any binders made of chipboard only, but mentioned that many binders are made exclusively of pressboard.

The Agency is aware of two manufacturers that produce uncovered chipboard binders made from recovered materials. According to these manufacturers, their binders contain up to 100 percent recovered materials. Therefore, EPA is designating both covered and uncovered chipboard binders in the final CPG.

b. Pressboard binders. Another commenter stated that EPA's proposed item designation for binders was incomplete because it did not mention binders made from pressboard.

This commenter is correct; EPA inadvertently omitted reference to pressboard in the proposed CPG under the erroneous assumption that "pressboard" was included in the term "chipboard." EPA has since determined that this is not the case. For this reason, today's final item designation for binders references chipboard and pressboard, both of which are paper and paperboard products. As explained in the Recovered Materials Advisory Notice that accompanies the final CPG, procuring agencies should rely on the guidance provided in Section II, Part A of the Recovered Materials Advisory Notice that accompanies this final CPG and in the draft Paper Products Recovered Materials Advisory Notice (60 FR 14182, March 15, 1995) when purchasing chipboard or pressboard binders.

c. Cloth-covered binders. In the proposed CPG notice, EPA stated that it was not aware of any manufacturers of cloth-covered binders that use recovered materials when producing the cloth cover and requested comment on the validity of this information. During the public comment period, the Agency did not receive any information that would indicate that the cloth cover used for binders contains any recovered materials. Therefore, the Agency is not recommending recovered materials content levels for the cloth component of covered binders.

3. Rationale for Designation

EPA believes that binders satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, plastics and paper are significant components of the solid waste stream.

b. Technically proven uses. EPA is aware of at least three manufacturers that produce plastic-covered binders with recovered plastic content in the covering, and two manufacturers that produce chipboard binders with recovered paper content. In addition, there are a number of manufacturer's that produce pressboard binders. At least one of the manufacturers of plastic-covered binders with recovered plastic content sells its binders through GSA's New Item Introductory Schedule. As previously discussed, the paperboard, chipboard and pressboard used

in binders for which EPA has information are made from high percentages of postconsumer recovered paper. Several states have also issued solicitations for plastic-covered, chipboard and pressboard binders containing recovered materials.

According to the information available to EPA, there are no national or Federal specifications that preclude the use of recovered paper in the manufacture of chipboard binders. GSA's specification for binders, A-A-2549A, "Binder, Loose-Leaf (Ring)," covers four types of binders, including cloth bound, flexible cover; cloth bound, stiff cover; plastic bound, flexible cover; and plastic bound, stiff cover. In the specification, GSA requires its binders to contain "a minimum of 100% waste paper, including a minimum of 30% postconsumer recovered materials." Based on EPA's information, there are no requirements in this specification that preclude the use of recovered materials in the plastic covering of plastic-covered binders. However, prior to issuance of the proposed CPG, EPA spoke to one manufacturer who stated that one test method cited in the specification, the Cold Crack test, may restrict the use of recovered plastic in the covering for plastic-covered binders. The Agency then requested information in the proposed CPG on the ability of vendors to meet this specification (see 59 FR 18880, April 20, 1994). Based on the information received in response to the request for comment as well as additional information gathered by the Agency, EPA is recommending lower recovered materials content levels in plastic binders in the final RMAN.

c. Impact of government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, binders. EPA does not have specific data on the number of binders procured by government agencies, although EPA estimates that the quantities are significant. Thus, EPA believes that binders are procured in sufficient quantities to support the designation under RCRA section 6002.

4. Designation

In 40 CFR 247.16(d), EPA is designating binders as items that are or can be made with recovered materials. This designation includes: (1) plastic-covered binders with recovered plastic content; (2) chipboard and pressboard binders with postconsumer recovered paper content; and (3) the paper component of covered binders. This designation does not preclude a procuring agency from purchasing a binder covered with or manufactured using another material, such as cloth. It simply requires that a procuring agency, when purchasing the designated types of binders, purchase these items made with recovered materials.

5. Recovered Materials Content Recommendations

EPA designated paper and paper products as procurement items in 1988 at 40 CFR Part 250. Because both the chipboard and pressboard used in binders are types of paperboard, they are already included in the 1988 designation. In a March 15, 1995 draft RMAN, EPA proposed revised recovered materials recommendations for paper and paper products (see 60 FR 14182). The draft RMAN contains recommendations content levels for pressboard binders within the

"bristols" subcategory and draft recommended content levels for chipboard within the miscellaneous paperboard subcategory. Procuring agencies should refer to these recommendations for covered and uncovered chipboard, pressboard, and other paperboard products used in binders.

E. Plastic Trash Bags

1. Background

In the CPG, the Agency proposed designating plastic trash bags (see 59 FR 18881, April 20, 1994). Plastic trash bags, also called trash can liners, are widely available with recovered materials content. They come in a wide variety of colors, ranging from clear to black; sizes, ranging from 11 gallon to 55 gallon; and thicknesses, ranging from 0.5 mil to 1.7 mil. According to the information available to EPA, HDPE, LDPE, and LLDPE are the recovered materials most commonly used to manufacture these items. The actual amount of recovered materials contained in a bag is affected by the color, size, and thickness of the bag.

At proposal, EPA stated that we had information only on trash bags made from postconsumer recovered plastic and requested information on trash bags made from other recovered materials and the recovered materials content levels of those products (see 59 FR 18881, April 20, 1994). The agency received no information in response to this request.

2. Summary of Comments and Agency's Response

No commenters opposed the proposed designation of plastic trash bags.

3. Rationale for Designation

EPA believes that plastic trash bags satisfy the statutory criteria for selecting items for designation.

a. Use of materials in solid waste. As discussed above in section II.A, plastics are a significant component of the solid waste stream.

b. Technically proven uses. EPA is aware of at least five manufacturers that produce trash bags with recovered materials content. In addition, trash bags with recovered materials content are available from the GSA "Supply Catalog." Also, the National Association of State Purchasing Officials' Recycled Product Database, which provides detailed information on state purchases of products containing recovered materials, lists 88 different contracts for plastic liners with recovered materials content.

GSA's Commercial Item Descriptions (CIDs), A-A-2299B and A-A-1668D, cover plastic trash bags. These CIDs are based on performance requirements. According to the information

available to EPA, neither CID precludes the use of recovered materials in the manufacture of plastic trash bags. In addition, several states, including Michigan, Nebraska, Minnesota, Delaware, and Wisconsin, have their own specifications for plastic trash bags containing recovered materials.

c. Impact of government procurement. Government agencies purchase, or use appropriated Federal funds to purchase, trash bags. EPA does not have specific data on the number of trash bags procured by government agencies, although EPA estimates that the quantities are significant. Thus, the Agency believes that these items are procured in sufficient quantities to support the designation of these items. As previously discussed, the National Association of State Purchasing Officials' Recycled Product Database lists 88 different contracts for plastic liners with recovered materials content.

4. Designation

In 40 CFR 247.16(e), EPA is designating plastic trash bags as items that are or can be made with recovered materials. This designation does not preclude a procuring agency from purchasing a trash bag manufactured using another material, such as paper. It simply requires that a procuring agency, when purchasing trash bags, purchase these items made from recovered materials. EPA encourages agencies purchasing trash bags made with other materials to seek these items containing recovered materials as well.

XVII. MISCELLANEOUS

In the new Part 247, EPA established §247.17 for item designations that do not fall within any other product category. However, EPA is not currently designating any items in this category.

XVIII. OTHER ITEMS CONSIDERED FOR DESIGNATION

In addition to the items proposed for designation, EPA listed 23 items as potential items for designation and four items that the Agency felt were inappropriate for designation. The Agency also requested information and comments on these items (see 59 FR 18881, April 20, 1994).

A. Potential Items for Designation

In addition to the items proposed for designation, EPA listed and requested information on 23 items as potential items for future designation and 4 items that the Agency believed were inappropriate for designation at this time (59 FR 18881, April 20, 1994).

EPA received comments on most of the 23 items listed as potential items for future designation. In addition, EPA received comments on pallet stretch wrap and strapping, which, at proposal, were two of the items EPA believed to be inappropriate to designate (59 FR 18812, April 20, 1994). Three commenters provided information on pallet stretch wrap and one on strapping, indicating that these two items may be suitable for designation. The information provided in the comments will be considered when the Agency evaluates items for possible designation in a future update of the CPG.

B. Items Considered Inappropriate for Designation

EPA described sheet glass and glass fiber in the preamble to the proposed CPG as inappropriate to designate based on the information available to the Agency (see 59 FR 1881, April 20, 1994). EPA received no comments or information to suggest otherwise and, therefore, will not consider these items in the next update of the CPG.

XIX. AVAILABILITY OF DESIGNATED ITEMS

EPA has developed lists of manufacturers and vendors of the items designated in today's final CPG. These lists will be updated periodically as new sources are identified and EPA becomes aware of changes in product availability. To assist procuring agencies, the lists will be made available at no charge by calling EPA's RCRA Hotline at (800) 424-9346, or, in the Washington, D.C. area, at (703) 412-9810. They also will be available for review in the RCRA Information Center (RIC). Procuring agencies are encouraged to contact manufacturers and vendors directly to discuss their specific needs and to obtain detailed information on the availability and price of recycled content products meeting those needs.

The U.S. General Services Administration (GSA) publishes an "Environmental Products Guide," which lists items available through its Federal Supply Service. This Guide is updated periodically as new items become available. Copies of the GSA "Environmental Products Guide" can be obtained by contacting GSA's Centralized Mailing List Service in Fort Worth, Texas at (817) 334-5215.

In addition to the information provided by EPA and GSA, there are other publicly-available sources of information about products containing recovered materials. For example, the "Official Recycled Products Guide" (RPG) was established in March 1989 to provide a broad range of information on recycled content products. Listings include product, company name, address, contact, telephone, fax, type of company (manufacturer or distributor), and minimum recycled content. Price information is not included. The RPG is available on a subscription basis from American Recycling Market, Inc., (800) 267-0707. Private corporations that have researched recycled product availability may also be willing to make this information publicly available. For instance, as part of the McRecycle USA® program, the McDonald's Corporation established a Registry Service for manufacturers and suppliers of recycled content products. The

Corporation has compiled a database of registrants and makes this information available upon request. More information on the McRecycle USA® Registry Service is available by calling (800) 220-3809.

State and local recycling programs are also a potential source of information on local distributors and availability. In addition, state and local government purchasing officials that are contracting for recycled content products may have relative price information. A list of state purchasing/procurement officials has been placed in the RIC and will be updated periodically. Also included in the public docket is a list of states with recycled content products purchasing programs, current as of April 1994.

Information is also available from trade associations whose members manufacture or distribute products containing recovered materials. A list of such trade associations is also included in the RIC.

XX. ECONOMIC IMPACT ANALYSIS

Details on EPA's Economic Impact Analysis for the CPG are described in the "Technical Background Document for the Comprehensive Procurement Guideline" which is included in the RCRA public docket for the final CPG.